

III. CHIRONOMIDÆ, SCIARIDÆ, PHORIDÆ, SYRPHIDÆ, PIOPHILIDÆ,
HELOMYZIDÆ, CALLIPHORIDÆ, CESTRIDÆ, AND TACHINIDÆ.

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SUBORDER NEMATOCERA.

Family CHIRONOMIDÆ.

SUBFAMILY TANYPINÆ.

There are about half a dozen species of this subfamily recorded from Greenland, but in the present collection I find only three.

Genus PROCLADIUS Skuse.

1. *Procladius crassinervis* (Zetterstedt).

Tanytus crassinervis Zetterstedt, Ins. Lapp., p.817 (1840).

A series of specimens of both sexes, only one of which bears a date, July 3.

This species is known to occur in Scandinavia and Britain, and has also been recorded from East and West Greenland by Lundbeck.

Genus ANATOPYNIA Johannsen.

I have before me one male specimen which I have been unable to satisfy myself is a representative of a described species and I give below the description thereof.

2. *Anatopynia centralis*, sp. nov. (fig. 1).

Male: Black, slightly shining. Antennæ including the plumes fuscous. Mesonotum dusted with grey, with four blackish vittæ; scutellum dusted with greyish; hairs fuscous. Abdomen concolorous with thorax, the apices of tergites rather distinctly, their bases indistinctly, testaceous, the grey dusting variable in intensity apically when seen from different angles. Legs fuscous, tibiæ a little paler; hairs dark. Wings greyish hyaline, with a conspicuous fuscous cloud over the cross-veins, and when seen against the light looking downward from tip with a dark cloud over media and cubitus, the latter extending forward to radius from level of apex of second branch of cubitus to near apex of media. Halteres dark brown, whitish at apices.

Antennal flagellum very long plumose. Mesonotum with the usual biseriata central, and more numerous sublateral and lateral, series of hairs. Abdomen typical, the hairs long; hypopygium as shown in Figure 1. Legs long and slender, fore metatarsus about four-sevenths as long as fore tibia and fully 1.5 as long as second segment, first to third segments long-haired, fourth short-haired and about half as long as third and 1.5 as long as fifth segment; fore tibia very short-haired except apically, where the hairs are decumbent and not very long; fore femora not as long-haired as mid and hind pairs, the latter with long erect hairs, their tarsi shorter-haired, fourth segment of mid tarsi not longer than fifth; fore tibia with a single apical ventral spur, mid and hind pairs each with two spurs, the inner



FIG. 1.
Anatopynia centralis,
hypopygium of male,
left side, dorsal view.

¹Inserted by W. J. Holland.

one longer than the outer; hind tarsi without apical spurs on any of the segments; pulvilli lacking. Wings almost without hairs and with the normal venation. Length, 7.5 mm. Type, July 3, 1930.

The hypopygium has been detached and is now mounted on the card with the specimen.

Genus PENTANEURA Philippi.

I have before me a single female specimen which I refer here.

3. *Pentaneura* sp. ?

A fuscous species with dark legs and unmarked densely haired wings. The second wing vein (R_2) is complete, though rather faint, and is not connected with the first by a cross-vein, which character would place the species in the subfamily *Diamesinae* as defined by Edwards.² The haired wings prevent the species from falling into *Protanytus*, which is the only genus of that group, in which there are fourteen segments to the female antennæ, and as the number of segments to the female antennæ in *Pentaneura* is given as 12-13 it does not fit very well into the present genus either. The pulvilli are lacking, and the other characters appear to suggest that it is a rather aberrant species of the latter genus. Length, 3.5 mm. July 3, 1930.

SUBFAMILY CHIRONOMINÆ.

Until recently the family was divided into two subfamilies, *Tanyptinae* and *Chironominae*, but the latter has been further divided into *Chironominae* and *Orthoclaudiinae* by the most recent workers, and I am accepting this scheme in the present paper.

The principal distinction between the present subfamily and the *Orthoclaudiinae* consists in the structure of the male hypopygium, which in the *Chironominae* has the styles, or apical lateral processes, directed straight backwards, while in the *Orthoclaudiinae* these styles are folded against the inner sides of the basal pieces and so directed forward. The basal segment of the fore tarsi is usually as long as, or longer than, the fore tibia in the *Chironominae* and the fore tibia rarely possesses a distinct spur, while in the other group the basal segment of the fore tarsi is shorter than the fore tibia and the latter has usually a distinct spur.

There are but two genera of this subfamily in the present collection, most of the species belonging to the genus *Chironomus* (*sens. lat.*), only one being referable to *Tanytarsus* (*sens. lat.*).

Genus CHIRONOMUS Meigen.

This genus has been divided into a large number of subgenera mainly on the structure of the hind tibial combs, pulvilli, fore tibial spurs, and pronotum, but it does not appear necessary to discuss these herein because of the small number of species to be dealt with in this collection. I have, however, given the subgeneric allocation of the species as I interpret them, and can state definitely that not one of them is identical with any, which I described in the report on the Pribilof Islands Diptera in 1923³.

KEY TO THE SPECIES.

1. Bright green species; mesonotum with four partial black vittæ; femora green; tibiae yellowish, becoming brownish apically; tarsi dark brown; wings with no dark cloud over the cross-vein r-m sp.?
- Black or brownish black species, femora not green; the r-m cross-vein usually distinctly darkened 2
2. None of the segments of the fore tarsi of the male with long erect fine hairs 3
- At least the apical third or more of the basal segment and all of the next two or three segments of the fore tarsi of the male with long usually erect hairs, which are at least four times as long as the diameter of the segments. . . 4

²Trans. Ent. Soc. Lond., Vol. LXVII, pt. 2, p. 286 (1929).

³North American Fauna, No. 46, Bur. Biol. Surv., U. S. Dept. Agric., p. 170.

3. Hypopygium as shown in Figure 2; r-m cross-vein not distinctly darkened; legs slenderer, the mid and hind tibiæ darker at their extreme apices than elsewhere. *stægeri* Lundbeck
 Hypopygium as shown in Figure 3; r-m cross-vein distinctly clouded; legs stouter, the mid and hind tibiæ uniformly deep black. *atrîbia*, n.sp. nov.?
4. Long hairs on apex of basal segment and on entire second segment not erect; hypopygial processes as in Figure 4. *decumbens*, n.sp.
 Long hairs on apex of first and all of second segment of fore tarsus erect and very fine. 5
5. Apical process of last tergite stout, when viewed from the side, as shown in Figure 5, the heavily chitinized inner black process not slender at apex. *hyperboreus* Stæger
 Apical process of last tergite slender, when viewed from the side, as shown in Figure 6, the heavily chitinized inner black process hook-like, the apex slender. *unguiculatus*, n.sp.

4. *Chironomus* sp. ?

This species, to which I do not care to attach a definite identification, is of a bright green color, with four partial black mesonotal vittæ, and the dorsum of the abdomen partly dusted with grey, the legs green, with the tibiæ yellowish, becoming darker towards apices, where they are brown, and the tarsi dark brown. The wings are whitish hyaline, without a dark cloud over the cross-vein. Length, 6.5 mm. One female without date.

5. *Chironomus* (*Chironomus*) *hyperboreus* Stæger (Fig. 5).

Chironomus hyperboreus Stæger, Nat. Tidsskr. (2) I, p. 349 (1845), *part.*

Chironomus polaris Schiodte, Till. til Rink: Grøn. p. 67 (1857).

This and the next three species are very similar, all being black in color, with grey-dusted vittæ on the mesonotum, and the apices of the abdominal tergites more or less grey-dusted and sometimes narrowly testaceous. The legs are usually entirely black, but in some cases the tibiæ are brownish with black apices. The wings are greyish hyaline, with or without a dark cloud over the cross-vein. There is some variation in the color of the knobs of the halteres, which are sometimes all dark, and in some specimens yellowish at their bases. I fear that there must be an arbitrary assignment of the name *hyperboreus*, and, without a careful examination of the male hypopygium of the type-specimen, I accept the one figured herein as correct. The long-haired fore tarsi of the male and the shape of the apical dorsal process of the apical abdominal tergite coupled with that of the apical style and the inner heavily chitinized process (Fig. 5a and b) distinguish the species from the others in this collection. Length, 6.5-7.5 mm. Three males, one with date July 3, 1930.



FIG. 5.

Chironomus hyperboreus, hypopygial structures of male; a, apex of style, dorsal view; b, inner process, dorsal view.

Four females may belong to this species or to *unguiculatus*. Two taken on July 3, 1930.

6. *Chironomus* (*Chironomus*) *stægeri* Lundbeck (Fig. 2).

Chironomus annularis Zetterstedt, Ins. Lapp., p. 809 (1840), *part.*

Chironomus hyperboreus Stæger, Nat. Tidsskr. (2) I, p. 349 (1840), *part.*

Chironomus stægeri Lundbeck, Vid. Medd. Nat. For. Kobenhaven, p. 271 (1898).

Similar to the preceding species, with which Stæger confused it, differing in the hairing of the fore tarsi of the male, the less evident pale apices to the abdominal tergites, and the structure of the hypopygium of the male (Fig. 2). Length, 7 mm. One male, July 1, 1930.



FIG. 2.

Chironomus stægeri, hypopygium of male: a, dorsal view of left side; b, terminal process of apical tergite in profile; c, inner process in profile.

7. *Chironomus (Chironomus) atritibia*, sp. nov.

(Fig. 3).

Male: Similar to the next preceding species, but a little larger and more robust, with stronger legs, and the general color of a deeper black. Hypopygium as in Figure 3, the apical dorsal process of apical tergite glossy black, heavily chitinized, flattened above, and beak-like in profile. Length, 8 mm. Type, July 3, 1930. One damaged male same date.

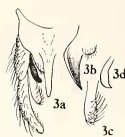


FIG. 3.

Chironomus atritibia, hypopygium of male: a, dorsal view of left side; b, terminal process of apical tergite in profile; c, outer process; d, inner process.

8. *Chironomus (Chironomus) decumbens*, sp. nov.

(Fig. 4).

Male: Similar to the preceding species, but the long hairs on the apical third of the basal and all of the second segment of fore tarsus are not as long as in the other, being only about three times as long as the diameter of the segments upon which they are situated, and they are directed towards the apices of the segments, not erect, though not lying close against their surfaces. The hypopygium is quite similar to that of *hyperboreus*, the apical dorsal process of the apical tergite being very similar, but the style is more attenuated at apex, and the inner process slightly different (Fig. 4). Length, 7.5 mm. One male without date.



FIG. 4.

Chironomus decumbens, hypopygial structures of male: a, apex of style, dorsal view; b, inner process, dorsal view; c, terminal process, of apical tergite, dorsal view.

9. *Chironomus (Chironomus) unguiculatus*, sp. nov.

(Fig. 6).

Male: Differs from *decumbens* in having the fore tarsal hairs very fine, erect, and much longer, and the hypopygium with the apical dorsal process of the apical tergite much slenderer when seen in profile, and not flattened on dorsal surface, the style not noticeably attenuated apically, and the inner black heavily chitinized process hook-like, with the apex curved and slender (Fig. 6). For other characters of all species see the key given above. Length, 7.5 mm. Type and five paratypical males without date.



FIG. 6.

Chironomus unguiculatus, hypopygium of male: a, left side from above; b, terminal process of apical tergite in profile.

Genus TANYTARSUS van der Wulp.

This genus is distinguished from *Chironomus* by the presence of macrotrichia on the wings. Until recently this was the only genus so distinguished, but there are many named groups, which have been separated from *Tanytarsus* in the strict sense, accepted by some workers as genera, and by others as subgenera or groups of lesser rank. As there is but one species among the material in hand it is unnecessary to deal with the status of these con-

cepts, the more particularly as that one species is referable to *Tanytarsus* in the narrower and limited sense.

Lundbeck has recorded *T. junci* Meigen and *tenuis* Meigen from Greenland, but the records should be carefully checked to determine if this occurrence of the European species is correct. The species now before me is not at all like *junci*, as accepted by European authorities. In *tenuis* the male has the mesonotum green, with black vittæ.

10. *Tanytarsus islandica*, sp. nov. (Fig. 7).

Male and female: Fuscous, the thorax and abdomen of the male almost black, with the former slightly shining. Legs fuscous, paler in female. Thorax of latter green, with the usual broad black vittæ. Wings hyaline. Halteres of male fuscous, of female dusky greenish.

Fore tibia of male hardly half as long as basal segment of fore tarsi, in the female fully half as long as that segment; tarsi of male without long erect hairs; mid and hind femora and tibiae of male with long erect hairs, those of female less conspicuously haired. Male hypopygium as shown in Figure 7. Macrotrichia rather sparse and inconspicuous. Length, 3 mm.

Type, male, without date; allotype also without date; one female paratype dated July 3, 1930.

This species will run down to *gmundensis* Egger in Needham's key to the American species, but the hypopygia of the two species are distinct.



FIG. 7.

Tanytarsus islandica, hypopygium of male: a, left side, dorsal view; b, right side, ventral view.

SUBFAMILY ORTHOCLADIINÆ.

I have briefly stated the characters by means of which this group may be separated from *Chironominae* under the introduction to the latter. A glance at the figure of the hypopygium of any species of *Chironomus* in this paper will show at once the distinction between that organ and the typical forms of it in *Orthocladinae*, some of which are figured herein also. There does appear to be a closer resemblance between the latter and *Tanyptinae* in so far as the hypopygia are concerned, but the venation of the wings readily separates them, and evidently the lack of the m-c cross-vein in the present group is a more significant character (linking them with the *Chironominae*) than the general structure of the hypopygium, which latter might be accepted as associating them with the *Tanyptinae*. The larvæ of the latter are said to be predacious, which is not the case in the two other subfamilies under discussion as far as I am aware.

The paucity of genera in the present collection precludes any discussion of the systematic relationships within the subfamily and I merely deal with the species available.

The subfamily contains two groups of genera, one with, and the other without macrotrichia, or distinct hairs, on at least the apices of the wings; both groups are represented in the present collection.

Genus METRIOCNEMUS Van der Wulp.

This genus has been divided into a large number of named segregates, some of them proposed as genera and some as subgenera, but they are with difficulty distinguished from each other, and do not appear entitled to even subgeneric status. It is of interest, however, to note here that the species from this collection belongs to *Metriocnemus* in the strict sense.

11. *Metriocnemus (Metriocnemus) perfuscus*, sp. nov. (Fig. 8).

Male: Entirely black, slightly shining, the mesonotum with greyish dust on the usual central and sublateral stripes, abdomen but faintly dusted on the apices of the tergites, more broadly so laterally; legs fuscous; wings hyaline; veins colorless, except the radius; halteres and squamæ dark brown.

Fore tarsi without long erect hairs, the basal segment over half as long as the fore tibia; mid and hind legs with the femora, tibiae, and at least the basal segment of the tarsi, with moderately long hairs. Hypopygium as shown in Figure 8, no distinct process on inner side of basal arm, the apical dorsal process of apical tergite slender. R_2 faint, ending near R_1 , R_{4+5} gradually approaching costa so that the cell ends in a narrow point and the costal vein is continued for some distance beyond the junction. Length, 3-4 mm.

Female: What I take to be the female of this species is similar to the male in color, the thorax being black and the legs fuscous, but it differs in having the wings yellowish and much more numerous and pale hairs which are present on almost the entire surface and not only on a part of the apical half, and the halteres are dirty yellow.

Type, male, allotype, and 5 male paratypes, all with date July 3, 1930.

There are six species of this genus recorded from Greenland, *ursinus* Holmgren, *fuscipes* (Meigen), *atratus* (Zetterstedt), *lundbecki* Johannsen, *debilipennis* (Lundbeck) and *incomptus* (Zetterstedt), but I cannot satisfy myself that the present species is referable to one of these and describe it as new.

Genus *SPANIOTOMA* Philippi.

This is the genus generally known in this country as *Orthocladius* Van der Wulp, but Philippi's name has priority and must be used.

There have been many genera proposed within the group, but perhaps the best way to treat these is as has been done by Edwards in his recent paper on the British *Chironomida*, as subgenera. There appear to be but two in the present collection and it is my intention to simply deal with these.

12. *Spaniotoma (Trichocladius) pubitarsis* (Zetterstedt)

(Fig. 9).

Chironomus pubitarsis Zetterstedt, Ins. Lapp., p. 811 (1840).*Chironomus frigidus* Stæger, Naturh. Tidsskr. (2) I, p. 351 (1845).*Orthocladius pubitarsis* Mason, Ent. Mon. Mag., (2) I, p. 200 (1890).

A male and female which I accept as belonging to this species are in the collection. I have figured the male hypopygium (Fig. 9) as a check upon the identification.

Male, July 3, 1930, female without date.

13. *Spaniotoma (Trichocladius) variabilis* (Stæger) (Fig. 10).*Chironomus variabilis* Stæger, Nat. Tidsskr., II, p. 571 (1839).

A long series of male and female specimens which I accept as this species in the collection. The males show some variation in the color of the thorax, the black dorsal vittæ in



FIG. 8.

Metriocnemus perfuscus, hypopygium of male, right side from above.



FIG. 9.

Spaniotoma pubitarsis, hypopygium of male, left side from above.

some specimens being so broad that they take up almost the entire disc, while in others there is a line of the green or yellow ground-color to be seen on the entire length of the mesonotum. The females as usual have the pale ground-color more evident, the black vittæ being always separated on the entire length of the mesonotum, and sometimes the vittæ are much paler in front. I have figured the hypopygium of the male (Fig. 10).

Eighteen specimens, five dated July 3, 1930; the others without date.

In a recent list of species occurring in Greenland Dr. F. W. Edwards has synonymized this species with *vitripennis* Meigen, which is probably correct.



FIG. 10.

Spaniotoma variabilis,
hypopygium of male, right
side from above.

Family CERATOPOGONIDÆ.

This group has usually been considered as a subfamily of the *Chironomida*, but the structure of the different stages and especially that of the proboscis of the imagines coupled with their predacious habits appear to me to justify family segregation. Many of the species of the smaller sized genera are blood-suckers and several, especially in the genus *Culicoides* Latreille, are irritating pests to man in various faunal regions. The larvæ and pupæ are aquatic in most genera, except *Forcipomyia* Meigen.

Genus CERATOPOGON Meigen.

14. *Ceratopogon sordidellus* Zetterstedt.

Culex pulicans O. Fabricius, Faun. Grœnl., 211, 173 (1780), not Linné (*lapsus* for *pulicaris*).
Ceratopogon sordidellus Zetterstedt, Ins. Lapp., p. 820 (1840).

I am accepting as this species one male and three female specimens of a black species, in which the thorax and abdomen are rather evenly dusted with grey and the legs are dark brown or fuscous. The mesonotum is without vittæ; the scutellum is concolorous with the remainder of thorax; and the wings are greyish hyaline without dark markings. Knobs of the halteres yellow.

The dorsal surface of the hind tibiæ and hind metatarsi in the male is furnished with quite closely placed hairs, which are at least three times as long as the diameter of the parts upon which they occur; the female has similar but less numerous hairs. The wings are haired on the apical costal halves, the costal vein extends almost two-thirds of the distance to wing tip, and R_1 is fused for a variable length with R_{2+3} instead of having R_2 narrow and vein-like. Length, 2 mm. One male and 3 females, July 3, 1930.

There is no record as to the conditions surrounding the capture of the species.

Family SCIARIDÆ.

This family until a few years ago was considered merely as a subfamily of the *Mycetophilidæ*, but is now held to be distinct therefrom.

Genus SCIARA Meigen.

About twenty species of this genus have been described or recorded from Greenland, but in the present collection there is but one.

15. *Sciara* sp. ?

One female belonging to a group in which the species are mainly distinguished from each other by the structure of the male hypopygia and in the absence of that sex consequently unidentifiable.

No date on label.

SUBORDER *BRACHYCERA*.

Division CYCLORRHAPHA.

Family PHORIDÆ.

Genus *MEGASELIA* Loiy.

This is the genus that has long been called *Aphiochata* Brues, the change having been made in recent years in Europe and generally accepted.

16. *Megaselia grœnlandica* (Lundbeck).

Phora grœnlandica Lundbeck, Vid. Medd. Nat. For. Kobenhaven, p. 307 (1900).

Aphiochata grœnlandica Lundbeck, Medd. om Grœnl., XXII, p. 620 (1917).

One specimen in the collection agrees well with the description of this species, but absolute identification requires a fuller description of the original specimen. No exact date on label.

It appears pertinent to note that I have adopted the recent system of classification of the Order given by Tillyard in his "Insects of Australia and New Zealand," though to my mind there are yet some points in connection with its general adoption which require elucidation. This statement is made to clarify the situation brought about by the change in placing the old group *Cyclorrhapha* under the *Brachycera* as a "Division," instead of accepting it as a "Suborder" in the same manner as the *Nematocera*. No American authority has dealt with the Diptera in a comprehensive manner since the above change was proposed, so that my acceptance of the scheme is only tentative.

Family SYRPHIDÆ.

There have been eleven species of this family recorded from Greenland by Lundbeck in various papers, and four of the species so recorded are among the material of the present collection.

Genus *PLATYCHIRUS* St. Fargeau and Serville.17. *Platychirus hyperboreus* (Stæger).

Syrphus hyperboreus Stæger, Naturh. Tidsskr., (2), I, p. 362 (1845).

Platychirus hyperboreus Lundbeck, Vid. Meddel. Nat. For. Kobenhaven, 1898, p. 301.

One female in rather poor condition, with the abdomen crushed and discolored, which I accept as this species, July 3, 1930.

Genus SYRPHUS Fabricius.

18. *Syrphus tarsatus* (Zetterstedt).

Scava tarsata Zetterstedt, Ins. Lapp., p. 601 (1840).

Scava lunulata Zetterstedt, l.c., p. 600.

Syrphus tarsatus Stæger, Naturh. Tidsskr., (2), I. p. 360 (1845).

Scava dryadis Holmgren, Vet. Akad. Handl., Vol. VIII, 5, p. 26 (1869).

Syrphus tarsatus Collin, Ann. Mag. Nat. Hist., Vol. XI, 9, p. 117 (1923).

This species is apparently very variable in color in both sexes, though the wide yellow central part of the face with the tendency to the presence of a central dark stripe over the central prominence is rather constant. The black tarsi with the swollen basal segment of the hind pair, which are most developed in the male, and the narrow yellow transverse marks on the abdominal tergites appear to be distinctive, though Collin in the paper referred to above in the synonymy has recorded a variety of the female, in which the abdomen has the yellow marks lacking, and the legs much darker than usual, while the face is almost without the pale central mark. Male, July 1, 1930; female, July 3, 1930.

Genus HELOPHILUS Meigen.

There are two species of this genus recorded from Greenland. Both of them are represented in the present collection.

19. *Helophilus grœnlandicus* (O. Fabricius).

Tabanus grœnlandicus, O. Fabricius, Faun. Grœnl., p. 208 (1780).

Helophilus bilineatus Curtis, App. Voy. J. Ross, 77, 30 (1835).

Helophilus arcticus Zetterstedt, Ins. Lapp., 595, pt. (1840).

Helophilus grœnlandicus Schiødte, Tillæg til Rink, "Grœnland, etc." p. 68 (1857).

This species averages smaller than *H. borealis*, and has some black hairs on the posterior portions of the black mesonotal vittæ. The hypopygium of the male is also distinct as noted by Collin.⁴

Four specimens, both sexes, two taken on July 3, 1930, the others without date of capture.

20. *Helophilus borealis* Stæger.

Helophilus borealis Stæger, Naturh. Tidsskr., (2) I. p. 359 (1845).

This species has no black hairs on the posterior portions of the black mesonotal vittæ.

It is less widely distributed than *H. grœnlandicus* as far as one may judge from the records, the preceding species being reported from the Palearctic region and in America as far south as Colorado, while *H. borealis* is almost exclusively arctic and there is some question of its occurrence in the Palearctic region.

The only specimen available from Southampton Island is a female, which has the hairs on the central part of the apical section of the fourth visible tergite much shorter and stronger than is the case in the females of *grœnlandicus* I have seen. No date of capture on label.

Family PIOPHILIDÆ.

This family contains comparatively few genera and most of the species are placed in the genus *Piophila* Fallen, which genus has recently been divided by Duda into several subgenera of rather doubtful standing, which are not recognized herein. The larvæ, as far as known, feed in decaying animal matter. Four species have been recorded from Greenland, but only two are represented in the Southampton Island collection.

⁴Ann. Mag. Nat. Hist., (10) VII, p. 90 (1931).

Genus *PIOPHILA* Fallen.21. *Piophila pilosa* Stæger.

Piophila pilosa Stæger, Naturh. Tidsskr., (2) I, p. 368 (1845).

Duda erected the subgenus *Lasiopiophila* for the reception of this species, using as the distinguishing character thereof the presence of hairs on the scutellum.⁵ Sometimes the fine hairs are almost entirely lacking on the disc of the scutellum, but there are in all the specimens I place here two short stout spike-like processes at the apex of the scutellum, one on each side of the apical bristles, which are not mentioned by Duda, but which might be considered of more importance than the hairs. There is considerable variation in the length of the specimens before me, 2-3.5 mm, and the density of the hairing varies also.

Twenty-three specimens, both sexes, nearly all dated July 3, 1930.

22. *Piophila aterrima* Becker.

Piophila aterrima Becker, Mém. de l'Acad. Imp. des Sci. St. Petersb., p. 402 (1897).

This species, which was originally described from Nova Zembya, has not previously been recorded from this continent, although I have seen many specimens from Herschell Island, N. W. T., collected by Owen Bryant. Duda in the paper above referred to placed it in his new subgenus *Allopiophila*. One male, no date.

Family HELOMYZIDÆ.

The members of this family are almost all carrion feeders and quite a few of them occur in the arctic regions, though but one is present in the collection now in hand.

Genus NEOLERIA Malloch.

This genus was erected for the reception of a species described in my report on the Canadian Arctic Diptera. It has since been sunk as a synonym of a European species, as indicated below.

23. *Neoleria tibialis* Zetterstedt.

Helomyza tibialis Zetterstedt, Ins. Lapp., p. 767 (1838).

Tephroclamys prominens Becker, Ann. Mus. Zoöl. Acad. Imp. Sci. St. Petersb., Vol. II, p. 402 (1897).

Neoleria rotundicornis Malloch, Rept. Canad. Arct. Exped. 1913-18, Vol. III, Pt. C, p. 83c (1919).

Leria septentrionalis Collin, Ann. Mag. Nat. Hist., (9) XI, p. 121 (1923).

Collin in a recent paper⁶ has cast some doubt upon the application of *tibialis* as the correct name of this species, but Czerny, who is probably the best authority on the family, accepts it and there is no doubt as to the applicability of the other names cited above.

The species occurs very abundantly in the northern parts of Canada, and I have seen it from Churchill on Hudson Bay, Herschell Island, and various localities in the Northwest Territories in collections made by Owen Bryant.

In the Southampton Island material there are nineteen specimens representing both sexes, mostly taken on July 3, 1930.

Collin has reported the species from the nest of *Larus glaucus* Linné, and specimens from St. Kilda, and Bear Island near Spitzbergen.

⁵Konowia, Vol. 3, p. 109 (1924).

⁶Ann. Mag. Nat. Hist., (10) VII, p. 90 (1931).

FAMILY MUSCIDÆ
SUBFAMILY SCATOPHAGINÆ.

This subfamily contains numerous genera of arctic distribution, but only two of them are represented in the present collection. I published a comprehensive key to the genera in my report on the Diptera of the Canadian Arctic Expedition in 1919.

GENUS SCATOPHAGA Fallen.

This genus contains many species, which occur in the far north in both hemispheres, but only two are represented from Southampton Island. The larvæ, as far as they have been reported, feed in manure; and the flies are in the main predacious, though they may be found on flowers and at sap of trees. Their principal insect-food consists of small Diptera.

24. *Scatophaga lanata* Lundbeck.

Scatophaga lanata Lundbeck, Vid. Medd. Nat. For. Kobenhavn, p. 294 (1900).

Scatophaga nigrolanata Cresson, Ent. News, Vol. XXIX, p. 136 (1918)?

This species, of which I have seen two paratypes in the collection of the United States National Museum, has the prosternal plate haired, and usually one or two fine hairs on the upper margin of the hypopleura in front of the spiracle. The presence of hairs on the prosternum readily distinguishes the species from any other found in the immediate region of Southampton Island, but there are two species from the Alaskan region which have the same character, *vulpina* Coquillett and *rubicunda* Malloch. Of these two I am convinced that the former is distinct from *lanata*, but I am in considerable doubt about the claim to distinction of *rubicunda* though as a rule the specimens appear rather distinct on the basis of color both of the body and the hairs covering it. Further investigation is required to determine the status of this form, which was described from the Pribilof Islands. The only other species, in which there are hairs on the prosternum, is in my experience *tropicalis* Malloch, originally described from tropical South America by Szilady, and peculiarly enough under the preoccupied name *lanata*. There does not appear to me to be any close affinity between the northern and southern species, the latter appearing to be more like *stercoraria* Linné than *lanata*.

There is considerable variation in the color of this species, the abdomen is sometimes distinctly reddish brown at apex and sometimes entirely fuscous, the legs are occasionally entirely red, but usually the bases of the fore femora are dark, and in the smaller specimens the femora of all legs may be black, and slightly shining. The similarity in the fifth sternite and the fine apical dorsal bristle on the hind tibia, as well as the similarly colored antennæ and dark hairs of the abdomen, incline me to disregard the variation in other features as indicative of specific distinction. Seven specimens, both sexes, one with date July 5, 1930.

25. *Scatophaga nigripes* Holmgren.

Scatophaga nigripes Holmgren, Ent. Tidskr., Vol. IV, p. 172 (1883).

Scatophaga islandica Becker, Berl. Ent. Zeitschr., Vol. XXXIX, p. 175 (1894).

This species is much darker than the preceding one and has the prosternum and hypopleura bare, though there are hairs on the pteropleura which are not present in *lanata*. It occurs throughout the far northern portions of Canada and Alaska eastward through Greenland to Iceland though as far as we know at present it does not occur in Europe. One female, no date.

Genus ERNONOETRA Becker.

This monobasic genus was originally described from Europe, but has been reported from the Northwest Territories in my Canadian Arctic Report.

26. *Ernoneura argus* Zetterstedt.

Scatomyza argus Zetterstedt, Ins. Lapp., 725 (1840).

Ernoneura argus Becker, Berl. Ent. Zeitschr., Vol. XXXIX, p. 135 (1894).

Becker placed the genus in his Section *Hydromyzina* but it belongs very close to *Scatophaga*, from which it is distinguished mainly by the presence of a number of small brown marks between the wing veins, in most of which there are short stumps of veins, at least along the posterior side of the second vein. There is a weak, but evident, stigmal bristle present, which may be the reason why Becker placed the genus where he did, but occasionally this is met with in *Scatophaga* also, and the tibial bristles, though less numerous in *Ernoneura* than is the rule in *Scatophaga*, are not sufficiently reliable to justify their use as a generic criterion. There are a number of fine hairs on the centre of the pteropleura in *argus* similar to those met with in a number of species of *Scatophaga*, such as the one listed immediately above, and also in a few other genera which do not belong to the immediate group containing these two genera. One female, without date.

It appears probable that this species is of holarctic distribution and that it has similar habits to most species of the preceding genus though nothing is known of its life-history.

SUBFAMILY ANTHOMYIINÆ.

This subfamily is distinguished from the former by the normal lack of hairs on the centre of the propleura, or when these are present the much narrowed frons of the males, and usually in the females the presence of a pair of cruciate bristles on the interfrontalia, the latter being always lacking in the *Scatophaginae*. The sternopleural bristles are almost invariably three in number; in the two genera recorded in the preceding subfamily there is but one present.

The present subfamily is readily distinguished from the next by the complete sixth wing-vein, the latter failing to reach the margin of the wing in the *Phaoninae* and subsequent subfamilies in the classification.

There are but three genera represented in this collection, each by one species.

Genus FUCELLIA Robineau-Desvoidy.

This genus has been dealt with in recent years by Stein, and Aldrich, so that one may readily identify the species. The common name "Kelp-Flies" has been applied to the insects by Aldrich as many of them occur in their larval stages in kelp thrown up on the seashore by the waves, though one species on the Pacific coast feeds upon the eggs of a small fish which are deposited in the sand above high water-mark at very high tides at a certain season of the year. The flies are predacious, as far as my experience goes, and do not occur far from the water.

There is but one species in the present collection though several more occur in adjacent territory.

27. *Fucellia ariciiformis* (Holmgren).

Scatophaga ariciiformis Holmgren, Königl. Vet. Akad. Forh., No. 6, p. 103 (1872).

Fucellia ariciiformis (Holmgren) Lundbeck, Vidensk. Medd. Naturhist. Foren. Kobenhaven, p. 292 (1900).

I have in past papers on Arctic material recorded this species from the Pribilof Islands, and the Northwest Territories. Aldrich has distinguished a species that he named *hinei* from Kodiak Island, Alaska, which I confess my inability to separate from the species here accepted as *ariciiformis*, though I must admit that I have not seen the type and paratype which are in the Ohio State University collection and am merely going upon specimens identified as *hinei* by its describer. I have seen specimens from Greenland identified as Holmgren's species by Lundbeck and the specimen now before me from Southampton Island agrees absolutely with these. I have not examined any specimen that will run to the caption in Aldrich's key containing the two forms under discussion that has any evident cloud at the apex of the wing such as is mentioned in the original description of *hinei*, so am not inclined to consider the two names are applicable to one species. One male, July 1, 1930.

Genus ACROPTENA Pokorný.

This genus I did not accept when I was working on the Canadian Arctic species, placing those referable to it in *Hydrophoria* Robineau-Desvoidy. I am now giving it generic status as the species can all be readily distinguished from those in the other group by a reliable character, the presence of fine hairs on the upper anterior margin of the hypopleura, *Hydrophoria* lacking the hairs. The arista is generally shorter haired in this genus.

Seven of the species included in my key to the species of *Hydrophoria*⁷ will fall thus into *Acroptena*. Two of these species occur in the Eastern Arctic section of Canada, but only one is among the material brought back by Sutton.

28. *Acroptena frontata* (Zetterstedt).

Anthomyza frontata Zetterstedt, Ins. Lapp., p. 669 (1840).

Acroptena frontata Neilsen, Medd. o. Græn., 29, p. 396 (1907).

Hydrophoria arctica Malloch, Rept. Can. Arct. Exped. 1913-16, Vol. III, pt. C, p. 69e (1919).

When I described *arctica* I had before me several species from Northern Europe identified by Mr. O. Ringdahl, and a few identified by the late Dr. M. Bezzi, the latter being mainly from the mountainous regions of central Europe, and amongst these were specimens identified as *frontata* by Bezzi. The species thus identified is quite distinct from *frontata* as now recognized, and this caused me to accept the Canadian species as new. There are in Europe two closely allied species, which until recently have been confused, but of these only *frontata* has been definitely recorded from the New World and as the characters cited for the recognition of *frontata* agree closely with those of *arctica* I propose to drop the latter as a synonym.

I have no males of the Greenland species before me at this time. Two females, July 1, 1930.

Lundbeck has recorded *Acroptena divisa* Meigen and *Hydrophoria brunneifrons* Zetterstedt from West Greenland. The first named species is found commonly in many parts of the United States and may be expected to occur on Southampton Island, but *brunneifrons* I have not seen from America, nor is there a specimen identified as either by Lundbeck in the material sent by him to the United States National Museum.

⁷Can. Ent., Vol. LII, p. 253 (1930).

Genus *ALLIOPS* gen. nov.

This genus is very similar to *Alliopsis* Schnabl and Dzeidzicki, in which I originally described the genotype. Subsequent comparison with the genotype of the latter appears to justify the separation now proposed, as *Alliops* has numerous setulose hairs on each side of the prosternal plate, while in *Alliopsis* this plate is entirely bare.

In the subfamily *Anthomyiinae* the presence of hairs on the prosternum is comparatively rare and is generally of sufficient importance to justify its acceptance as a generic character, a statement which applies equally well to the other subfamilies, except the *Scatophaginae* as far as my present information goes. In all other structural characters the two genera under discussion are in close agreement, the haired eyes being sufficient to distinguish them from nearly all the others in this subfamily, in which this character is quite rare as compared with the *Phaoninae*.

Genotype, *Alliopsis obesa* Malloch.

29. *Alliops obesa* (Malloch).

Alliopsis obesa Malloch, Rept. Can. Arct. Exped. 1913-18, III, C, 70c (1919). ♂.

Alliopsis sp. ?, *ibidem*, 71c. ♀.

Originally I had but one specimen of each sex and was not certain whether they belonged to the same species, but this I now believe to be the case. For a full description of the species see the paper above cited.

In the present collection there are five specimens in good condition, only one of which bears a date, July 1, 1930.

Nothing is known of the early stages of the species, but I have reared the closely allied genus *Lasiomma* Stein from bird's nests in Scotland.

On my request Doctor MacDonough had Doctor Fulke, who was then in Ottawa, examine the type specimens to determine whether the prosternum was haired, as in my original description this feature was omitted.

SUBFAMILY PHAONINÆ.

The members of this subfamily are distinguished from those of the preceding by the incomplete sixth wing-vein, the almost invariable lack of a strong basal ventral bristle on the hind tarsi, and the larger lower calypter which is invariably well protruded beyond the upper one. There is a greater tendency of the species to have four pairs of postsutural dorsocentral bristles and the hind tibia has usually few, if any, strong bristles on the posterodorsal surface, one of the notable exceptions being *Pogonomyia* Rondani, and to a lesser extent those genera most closely related thereto, in which we also find an exception to the general rule in this subfamily in the presence of a pair of cruciate interfrontal bristles in the females, and also one or more proclinate outer orbitals on the upper half of the frons.

Genus *POGONOMYIODES* Malloch.

I erected this genus for the reception of one species, which I described under the name *atrata*, but which has subsequently been found to be a synonym of a species described by Holmgren.

The genus is very similar to *Pogonomyia* Rondani, differing in having some fine hairs on the center of the pteropleura, no long bristles on the posteroventral surface of the hind tibia, and the anterior intra-alar bristle very weak or lacking.

30. *Pogonomyioides segnis* (Holmgren).

Aricia segnis Holmgren, Ent. Tidskr., Vol. IV, p. 169 (1883).

Pogonomyioides atrata Malloch, Rept. Can. Arct. Exped., Vol. III, pt. C, p. 67c (1919).

Pogonomyioides segnis Holmgren, Malloch, Proc. Cal. Acad. Sci., Vol. XI, p. 180 (1921).

Suggested synonymy of *atrata*.

This species was known to me when I described *atrata* in the female sex only, and the male with the very marked tuft of fine bristles beyond the middle of the ventral surface of the mid femur was unknown to me until some years afterwards. There is a fine male amongst the present material. No date on label.

Genus *HELINA* Robineau-Desvoidy.

Several species of this genus extend their range into the arctic regions of both the Old and the New Worlds, but only one such species is amongst those in the present collection.

31. *Helina luteisquama* (Zetterstedt).

Aricia luteisquama Zetterstedt, Dipt. Scand., Vol. IV, p. 1492 (1845).

This species was unknown to me, when I published my key to the species of this genus in the 'Canadian Entomologist' several years ago and was recorded first from this continent by Stein at a later date.

It rather closely resembles *fulvisquama* Zetterstedt, forming a natural group with it and one other European species not yet recorded from this continent; all being of northern or alpine distribution. As there is no English description of the species available a few of the more salient characters are given below to enable American students to identify it, should it occur in subsequent collections.

Black, including the antennæ, palpi, and legs; the frontal orbits, face, and cheeks dusted with white; thorax dusted with brownish; the mesonotum with four dark vittæ, the abdomen slightly checkered with brown dust and a pair of poorly defined dark subtriangular spots on second and third tergites; the disc of first tergite almost all dark and that of fourth not as distinctly marked as the third. Wings brownish hyaline; veins dark brown; both cross-veins very narrowly browned; bases of wings, the calyptræ, and halteres orange-yellow.

Eyes moderately hairy; frons at narrowest point in male not as wide as third antennal segment; arista very short haired; palpi normal. Mesonotum with four pairs of strong postsuturals; prealar long; sternopleurals three. Abdomen narrowly ovate. Hind femur slightly curved, with four or five preapical anteroventral bristles; mid tibia without a posterior tubercle near base, but with a series of closely placed short setulæ on basal fourth of posterior surface and beyond these one or two stronger bristles; hind tibia with a series of about ten long bristles from basad of the middle to apex on the posterodorsal surface; two or three anterodorsal bristles; a series of short bristles on most of the extent of the anteroventral surface, and a group of fine and rather prominent hairs at apex on the posterior side. All wing-veins bare. One male, no date.

The related species *fulvisquama* Zetterstedt occurs in Labrador and some of the mountainous parts of Canada. I redescribed this species under the name *tuberculata* in the 'Canadian Entomologist' several years ago from Labrador.

Genus *MYDÆINA* Malloch.

This genus was described in my report on the Canadian Arctic Diptera some years ago for the reception of a single species. It belongs to the same group as *Spilogona*, but the characters justify its separation therefrom. The puparium is unique in its structure in the family as far as I am aware. The larvæ are aquatic.

32. *Mydaeina obscura* Malloch.

Mydaeina obscura Malloch, Rept. Can. Arct. Exped. 1913-18, Vol. 3, pt. C, p. 62c (1919).

A very dark species, with cylindrical abdomen in the male and no indication of dark dorsal spots, which characterize most species of *Spilogona*. The lower calypter is much narrower than usual and rounded at apex. A distinctive feature of the species lies in the long and almost uniformly thick tarsi with the almost entire lack of setulose hairs on them.

Eight specimens, including both sexes, some with the date July 3, 1930, the others without date.

Originally described from the Northwest Territory.

Genus *Spilogona* Schnabl.

This genus has generally been considered as merely a subgenus of *Limnophora* Robineau-Desvoidy, but it is readily distinguished therefrom by the lack of setulae on the prosternum and the base of the third wing-vein. Both genera and several others related to them lack a well developed prealar bristle and the calcar on the hind tibia.

In 1930 J. E. Collin published a revision of the Greenland species of the genus *Limnophora* (*sens. lat.*) in which paper he included the genus *Spilogona*.⁸ I have found it rather difficult to determine the species in this and other collections by the use of this paper, as there is considerable variation in the hairing and bristling of the thorax and legs, and also in the size and color of the specimens in the arctic material. Another comprehensive paper which is appearing at this time by Mr. H. C. Hockett does not include all the northern species, ten of those recorded from Greenland by Collin being omitted, because of lack of an opportunity to study them.⁹ I have I hope surmounted the difficulties in the way of identifications and believe the names submitted herein are entirely reliable.

Of the eight so-called subgenera listed by Hockett in the paper just referred to this is the only one amongst the material now before me.

33. *Spilogona almqvisti* (Holmgren).

Aricia almqvisti Holmgren, Nov. Spec. Ins. Nordensk. Nova. Sem. descr., p. 17 (1881), and Ent. Tidskr., Vol. IV, p. 167 (1883).

Limnophora rostrata Ringdahl, Ent. Tidskr., Vol. XLI, p. 26 (1920).

Limnophora angulata Malloch, Trans. Amer. Ent. Soc., Vol. XLVI, p. 151 (1920).

The above synonymy is given by Collin. The figures given by that writer and myself do not agree exactly, but possibly there is sufficient variation in the species to account for the differences shown. There are but females of the species in the present collection, so that it is impossible to check up on the hypopygium. The two females available are readily distinguished from allied species by the following characters: Frons black; orbits dark brown almost to level of antennal bases and rather wide, with numerous long bristly hairs laterad of the inner marginal bristles and almost as long as them, those on the upper third recurved, the others mostly incurved; face, parafacials, and genae densely dusted with grey; face with a broad, rounded carina separating the antennal bases; vibrissal angle protruded about twice as far beyond anterior margin of eye as is the anterior extremity of the frons; arista thickened on basal fourth of more, pubescent, second segment about twice as long as thick. Hairs on mesonotum and pleura quite long, the postsutural dorsocentrals rather variable, usually four pairs, only the posterior pair strong. Genitalia without a terminal

⁸Trans. Ent. Soc. Lond., Vol. 78, p. 255.

⁹Jour. N. Y. Ent. Soc., Vol. 40, No. 1, p. 25 (1932).

crown of curved spines. Fore tibia usually with one or more posterior median bristles; mid tibia usually with two or more anterior and posterior submedian bristles; hind tibia with two or more anteroventral, anterodorsal, and posterodorsal bristles; mid and hind femora with long bristly hairs on the anteroventral and posteroventral surfaces, extending to apex only on the anteroventral surface of the hind pair. Squamæ yellowish white, margins yellow. Halteres brown. Length, 6-8 mm. Two females without date.

34. *Spilogona sanctipauli* (Malloch) (Fig. 11).

Limnophora megastoma Frey, (*nec* Boheman), Mem. Acad. Sci. Russ., Vol. XXIX, p. 27 (1915).

Limnophora sanctipauli Malloch, Proc. Calif. Acad. Sci., Vol. XI, No. 14, p. 180 (1921).

Limnophora triangulifera Lundbeck, (*nec* Zetterstedt), Vidensk. Medd. naturh. Foren. Kjob., 1898, p. 312.

The above synonymy in less complete form is that presented by Collin in the paper already referred to herein. I believe it is correct.

The species is a smaller one than the preceding, with the vibrissal angle much less produced but still farther in front of the anterior margin of the eye than is the anterior extremity of the frons. The male has the frons about as wide as the third antennal segment, the orbits much wider than the interfrontalia at narrowest point of latter, where it is almost obliterated in some specimens, orbits, parafacials, and anterior portion of genæ silvery white; the female has the frons over one-third the width of the head, with the triangle and orbits dull greyish brown, the inner margins of the latter darker, and the interfrontalia reddish brown; parafacials, face, and genæ dull greyish brown; each orbit with four or five inner marginal bristles, the upper one curved slightly outward over eye and the anterior series incurved, the hairs laterad of the bristles very fine, short, and not numerous. Presutural acrostichal hairs very fine and short, biserial; the mesonotum, especially in the male, much more distinctly dusted with whitish grey than in the preceding species, and with three dark brown vittæ, which are confluent behind the suture. Fore tibia usually without a median posterior bristle; mid tibia without ventral bristles and with two or more anterior and posterior bristles; hind tibia usually lacking the submedian posterodorsal bristle; mid femur with some long fine bristles on basal half of the posteroventral surface; hind femur with a complete series of rather weak anteroventral bristles and a few fine hairs on basal half of posteroventral surface, which are not as long as the femoral diameter. Hypopygium as shown in Figure 11. Length, 5-6 mm.

Three males and three females, July 1, 1930, one male July 3, and one male without date. There is one female without date in the collection which differs from the others in having the orbits, parafacials, and genæ dusted with silvery white except along the inner margin of each frontal orbit where the color is brown. This specimen does not differ in other respects from the typical form, so I consider it merely aberrant. Some specimens in the series lack one of the dorsocentral bristles on one side behind the suture, and there is some variation in the presence or absence of the submedian bristle on the fore tibia and the posterodorsal bristle on the hind tibia. There is also some slight variation in the position of the inner cross-vein of the wing.

Three males and three females, July 1, 1930, one male July 3, and one male without date.

There is one female without date in the collection which differs from the others in having the orbits, parafacials, and genæ dusted with silvery white except along the inner margin of each frontal orbit where the color is brown. This specimen does not differ in other respects from the typical form, so I consider it merely aberrant. Some specimens in the series lack one of the dorsocentral bristles on one side behind the suture, and there is some variation in the presence or absence of the submedian bristle on the fore tibia and the posterodorsal bristle on the hind tibia. There is also some slight variation in the position of the inner cross-vein of the wing.

35. *Spilogona hyperborea* (Boheman).

Aricia hyperborea Boheman, Öfvers. Vetensk. Akad. Förh., Vol. XXII, p. 571 (1865).

Aricia labiosa Boheman, *l.c.*

Aricia dorsata Holmgren, (*nec* Zetterstedt), K. Svenska Vetensk. Akad. Handl., Vol. VIII, p. 29 (1869).



FIG. 11.

Spilogona sanctipauli, hypopygium of male: a, forceps in profile; b, right half of superior forceps from behind; c, penis in profile.

Aricia fuliginosa Holmgren, *l.c.*, p. 30.

Aricia conspurcata Holmgren, *l.c.*, p. 31. ♂.

Aricia illota Holmgren, *l.c.*, p. 32.

Limnophora frigida Ringdahl, Ent. Tidskr., Vol. XLI, p. 27 (1920).

Limnophora pearyi Malloch, Trans. Amer. Ent. Soc., Vol. XLVI, p. 151 (1920).

I am accepting the above synonymy given by Collin.

The species is rather small and dark, with the vibrissal angle produced much as in the preceding species; the mid tibia with one or more short bristles on the anteroventral and posteroventral bristles beyond the middle, and the hind femur with no posteroventral bristles and a series on apical half of the anteroventral surface, the apical three of which are quite long and conspicuous. From *sanctipauli* it is distinguished mainly by the ventral bristles on the mid tibiae and a rather faint cloud over the outer cross-vein of the wing. The male has the fifth abdominal sternite with a wider and shallower cleft than in *sanctipauli*; a short rounded protuberance at apex of each lateral lobe that is not present in that species; and less dense and shorter hairs on each side. Length, 5-6 mm.

Two males and one female without date.

36. *Spilogona latilamina* Collin.

Limnophora (Spilogona) latilamina Collin, Trans. Ent. Soc. Lond., Vol. 78, p. 266 (1930).

One male and two females which I identify as this species are in the collection, none of them with exact date.

37. *Spilogona* sp. ?

One female which closely resembles the preceding one, but without a male I do not care to give it a name.

38. *Spilogona* sp. ?

Two females in rather poor condition which I cannot specifically identify.

39. *Spilogona dorsata* (Zetterstedt) (Fig. 12).

Aricia dorsata Zetterstedt, Dipt. Scand., Vol. 4, p. 1472 (1845).

This species has not previously been recorded from the New World but in the material before me there is one male which agrees with the description, resembling *hyperboreus* very closely, and differing in the hypopygial structure (Fig. 12). I realize that there may be some species of the genus so closely similar that the hypopygial characters show but few distinguishing features, but in the case in hand there are no greater disparities between the male figured and that shown in the paper on the Greenland species by Collin in which *dorsata* is figured though not described, than there is between the specimens of *sanctipauli* figured herein and in Collin's paper. I have carefully examined many species on the basis of these characters and as in all others there are certain departures from normal, so that it is necessary to allow somewhat for this in making identifications.

Until recently *dorsata* was considered as synonymous with *hyperboreus*, but it is now accepted as distinct.

One male without exact date.

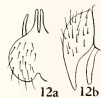


FIG. 12.

Spilogona dorsata, hypopygium of male: a, superior forepincers, right side from behind; b, forepincers in profile.

40. *Spilogona subrostrata* (Stein) (Figs. 13 and 14).

Linnophora subrostrata Stein, Arch. f. Naturges., 1918, Vol. 84, p. 54 (1920).

One male of which I identify as this species and of which I figure the hypopygium (Fig. 13). The mid tibia has a distinct submedian posteroventral bristle and the epistome projects slightly beyond the level of the anterior extremity of the frons.



FIG. 13.

Spilogona subrostrata, hypopygium of male: a, right side from behind; b, forceps in profile.

I have carefully compared it with a male of *brunneisquama* Zetterstedt, which it closely resembles in general structure, and also in hypopygial characters, but am convinced it is distinct. The female recorded immediately after *latelamina* herein may belong to this species and, if so, it is more readily distinguishable from that of *brunneisquama* than is the male, the much longer frontal triangle and other characters of the head being quite distinctive. Date, July 3, 1930.

Previously recorded only from British Columbia.



FIG. 14.

Spilogona subrostrata, fifth sternite of male, right side.

Family CALIPHORIDÆ.

Several genera of this family are usually met with in the far north, but only one species is in the present collection.

Genus CYNOMYIA Robineau-Desvoidy.

41. *Cynomyia cadaverina* Robineau-Desvoidy.

A common carrion-feeding species, which extends over northern Europe and America. Five females with dates July 3 and 4, 1930.

Family ŒSTRIDÆ.

Genus ŒDEMAGENA Latreille.

42. *Œdemagena tarandi* (Linné).

Œstrus tarandi Linné, Fauna Suec., 2nd edit., 429 (1761).

After receiving from Dr. Malloch his admirable report upon the Diptera collected by Dr. Sutton I discovered among some material preserved in alcohol about thirty larvæ of the Œstrid, which infests the Reindeer, or Caribou, and to which Sutton makes reference in his account of that mammal (See Memoirs Carn. Mus., Vol. XII, Part II, Sect. 1, p. 84). After conference with Dr. Hugo Kahl, an accomplished dipterist, we came to the unanimous conclusion that these larvæ are those of *Œ. tarandi* (L.) which is known as a parasite of the Reindeer in both the Old World and the New. The larvæ were taken from the skin of a Caribou, killed in November, and are therefore immature.

I take the liberty of inserting this note in Dr. Malloch's paper at the point where the Œstridæ occur in most lists of the Diptera. W. J. HOLLAND.

Family TACHINIDÆ.

Tribe PHOROCERATINÆ.

Genus MURDOCKIANA Townsend.

This monobasic genus was erected for the reception of a species, originally described as a *Euphorocera* by Coquillett, which, so far as known, occurs only in the Arctic portions of Canada and Alaska.

43. *Murdockiana gelida* (Coquillett).

Euphorocera gelida Coquillett, Revis. Tachin., 1897, p. 101.

Murdockiana gelida Townsend, Proc. U. S. Nat. Mus., Vol. XLIX, p. 622 (1916).

A shining black species with white dusted frontal orbits and face and similarly dusted bases to the abdominal tergites, the scutellum yellowish brown apically. Like all the species of *Phorocera* Robineau-Desvoidy the facial ridges are strongly bristled from above vibrissæ to above middle, and the prosternal plate has some bristly hairs on the sides. The lengthened second segment of the arista, which is not less than three times as long as its diameter, distinguishes the genus from its relatives, though the distinction is rather finer than one might reasonably desire in a group, in which all sorts of variations occur in this particular organ.

One male, July 3, 1930.

I have compared this specimen with the type material in the collection of the United States National Museum and find it in perfect agreement.